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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,509	10/31/2003	Dhruva Ranjan Chakrabarti	200314557-1	9606

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EXAMINER	
CHOU, ANDREW Y	
ART UNIT	PAPER NUMBER
2192	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,509	CHAKRABARTI ET AL.	
	Examiner	Art Unit	
	Andrew Y. Chou	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed on 02/05/2007.

2. Claims 1, 7, and 13 have been amended.

3. Claims 1 – 13 are pending.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 5 of claim 1, the limitation recites the term "necessarily". The term "necessarily" is indefinite because it is a relative term. The specification does not provide a standard for ascertaining the requisite degree and the term is not defined in the claim. Because what is considered "necessarily" by one person is not and/or necessarily also considered by everybody else. For the purpose of prosecution, Examiner assumes that "without necessarily inlining the common call site into all of said multiple call-chains having the common call site." may also mean "necessarily inlining..." as selectively as adaptive inlining.

The same can also be applied to line 4 of claim 7 and line 7 of claim 13.

Therefore, claims 2-6 and 8-12 are also rejected for being dependent on rejected base claims.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13 are rejected under 35 U.S.C 102(b) as being anticipated by Schmidt US 6,195,793 B1 (hereinafter Schmidt).

Claim 1:

Schmidt discloses a method of compiling a computer program with inline specialization (see Abstract), the method comprising:

given a call-graph, if multiple call-chains in the call-graph have a common call site, (see for example column 3, lines 46-51, "call graph", FIG. 4, and related text), inlining the common call site in one or more of the call-chains, without necessarily inlining the common call site into all of said multiple call-chains having the common call site (see for example column 3, lines 40-64, "adaptive approach is taken for...selecting inlining candidates...to select good inlining candidates...", FIG. 4, blocks 404, 408, and 422, and related text, column 6, lines 38-52, see also Abstract, "adaptive inlining").

Claim 2:

Schmidt further discloses the method of claim 1, further comprising: whenever a call site

from routine x to routine y is inlined, new edges are added from routine x to all routines inlinable within routine y (see for example FIGURE 3, step 316, and related text).

Claim 3:

Schmidt further discloses the method of claim 2, further comprising:

materialization of summary information for new call sites added to the call-graph (see for example FIGURE 2, step 210, "calculate code bloat estimate for current arc", and related text).

Claim 4:

Schmidt further discloses the method of claim 3, further comprising:

addition of the new call sites to the global work-list so that these call sites are considered for inlining (see for example FIGURE 2, step 204, FIGURE 3,step 306, column 5, lines 47-49, and related text).

Claim 5:

Schmidt further discloses the method claim 4, further comprising:

addition of dependence relationships between call sites. If a new call site, y, is added because of inlining of call site, x, then y is dependent on x (see for example column 7, lines 30-43).

Claim 6:

Schmidt further discloses the method of claim 5, further comprising:

patching of the new call site, y, during inline transformation of call site, x, with the aim of generating the intermediate transformation for call site, y (see for example FIGURE 2, and related text).

Claim 7:

Schmidt discloses an apparatus for compiling a computer program (see for example FIGURE 1, and related text) with inline specialization, the apparatus comprising: means to inline a common call site in one or more (but not all) of the call-chains in a call-graph, without necessarily inlining the common call site into all call-chains having the common call site (see for example column 3, lines 40-64, "...selecting inlining candidates...", Fig. 4, blocks 404, 408, and 422, and related text, column 6, lines 38-52).

Claim 8:

Schmidt further discloses the apparatus of claim 7, wherein whenever a call site from routine x to routine y is inlined, new edges are added from routine x to all routines inlinable within routine y (see for example FIGURE 3, step 316, and related text).

Claim 9:

Schmidt further discloses the apparatus of claim 8, wherein materialization of summary information for new call sites added to the call-graph is performed (see for example FIGURE 2, step 210, "calculate code bloat estimate for current arc", and related text).

Claim 10:

Schmidt further discloses the apparatus of claim 9, wherein the new call sites are added to the global work-list so that these are considered for inlining (see for example FIGURE 2, step 204, FIGURE 3,step 306, column 5, lines 47-49, and related text).

Claim 11:

Schmidt further discloses the apparatus of claim 10, wherein dependence relationships

are created between call sites (see for example column 7, lines 30-43).

Claim 12:

Schmidt further discloses the apparatus of claim 11, wherein the inline transformation patches up the intermediate representation of the new call sites (by considering the dependence relationships) before potentially inlining them (see for example FIGURE 2, and related text).

Claim 13:

Schmidt discloses a computer program product comprising a computer-usable medium having computer-readable code embodied therein (see for example FIGUREs 1 & 6, and related text), the computer program product being a source code compiler with cross-module optimization (see for example FIG. 1, item 220, "compiler", and related text), the compiler including and inline specialization feature such that given a call-graph, if multiple call-chains in the call-graph have a common call site, the common call site is inlined in one or more of the call-chains graph, without necessarily being inlined into all of the multiple call-chains having the common call site (see for example column 3, lines 40-64, "...selecting inlining candidates...", FIGURE 2, Fig. 4, and related text).

Response to Arguments

4. Applicant's arguments filed on 11/16/2006 have been fully considered but they are not persuasive.

In the Remarks pages 6 and 7, applicant argues:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon Which applicant relies (i.e., not a time-based change of data, but a difference between the personal feature and the reference, which is unchanged as a personal feature,) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1 181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding now claimed "without necessarily inlining the common call site...", a reasonable interpretation may also mean – necessarily inlining the common call site – as selectively as adaptive inlining (Abstract, column 3, lines 40-64, "...adaptive approach is taken for...selecting inlining candidates...to select good inlining candidates..."), thus, Schmidt also teaches the limitation of claim 1 as applied above.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed tot eh TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

AYC

TUAN DAM
SUPERVISORY PATENT EXAMINER